45621/FLC/F179

METHOD AND APPARATUS FOR A BANDWIDTH BROKER IN A PACKET
NETWORK

ABSTRACT OF THE DISCLOSURE

A method and apparatus for allocating bandwidth within a
network domain. A centralized bandwidth broker maintains a link-
level database including detailed flow data for individual links
in a network domain and a path-level database including
summarized flow data for individual paths in the network domain.
The bandwidth broker determines bandwidth allocations at a path-
level by allocating discrete amounts of bandwidth, termed quotas,
based on flow requests. If a flow request cannot be satisfied
by allocating quotas, then the bandwidth broker uses the link-
level database to recover bandwidth from unused bandwidth by
other paths on the same link in order to satisfy the flow
request. In another embodiment of a bandwidth broker, the
centralized bandwidth broker is replaced by a distributed
bandwidth broker including a central bandwidth broker and one or
more edge bandwidth brokers. An edge bandwidth broker conducts
path-level allocations and requests or releases quotas from and
to the central bandwidth broker. The central bandwidth broker
conducts link-level allocations and allocates or de-allocates
quotas to and from the path maintained by the edge bandwidth
broker.

FLC/flc

MAS PAS368695.5-*-7/30/01 11:01 PM